



MAPÚA MALAYAN COLLEGES MINDANAO

**The Relationship between Artificial Intelligence Integration and its
Acceptance among Elderly Residents in Talomo District, Davao City**

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Declaration of Originality

We, Gary Isaac A. Mendoza, Lord Christian Corilla, Ellie Reuben S. Domider, and Justin Derrick O. Sagpang, declare that this research is original to the best of our knowledge. We declare further that this activity was undertaken by us.

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The Relationship between Artificial Intelligence Integration and its Acceptance among Elderly Residents in Talomo, Davao City

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Abstract

As populations age, AI-driven tools such as remote monitoring, emergency-alert systems, and assistive technologies are increasingly proposed to support independence and safety for older adults. However, little is known about how the level of AI integration within daily life relates to older adults' acceptance of these technologies in local Philippine communities, creating an evidence gap this study addresses. This study examined the relationship between the level of AI integration and the acceptance of AI among elderly residents in Talomo District, Davao City. We hypothesized that higher levels of AI integration would be associated with greater AI acceptance, accounting for functional status and quality-of-life indicators. Using a descriptive-correlational design and purposive sampling, researchers administered the Elderly AI Integration and Acceptance Questionnaire, which incorporated the Katz Index, WHOQOL-BREF, and Technology Acceptance Model items, to 15 community-dwelling older adults in Barangay Bago Aplaya. Descriptive statistics summarized scale scores and demographics, while Analysis of Covariance (ANCOVA) tested the association between AI integration and AI acceptance. Participants reported a moderate level of AI integration and a moderate-to-high level of AI acceptance. Among various AI functions, those related to emergency alerts, connectivity, and caregiver support were rated as the most useful and relevant. Contrary to the hypothesis, statistical analysis revealed no significant relationship between AI integration and acceptance; instead, Quality of Life was found to be a significant predictor of acceptance. These findings suggest that elderly acceptance is driven more by general well-being and health needs than by current ownership or familiarity with the technology. Interpretation of these findings is limited by the small sample size and recruitment challenges, including the closure of the original survey site. Overall, the results indicate that embedding practical, safety-oriented AI features may enhance acceptance, but deployment strategies must prioritize health-related benefits and address access barriers rather than relying solely on exposure. Future research employing larger samples, mixed-methods approaches, and longitudinal designs is recommended to confirm these preliminary observations and inform scalable, culturally appropriate AI interventions for aging populations in similar Philippine communities.

Keywords: *Artificial intelligence; AI integration; technology acceptance; elderly / older adults; Technology Acceptance Model (TAM); remote health monitoring; wearable sensors; Davao City (Talomo District); digital health adoption*

SDG: Good Health and Well-Being (SDG 3)

I. Introduction

1.1 Overview and Problem of the Study

Davao City's elderly population is growing, with nearly 138,000 residents aged 60 and over (or 7.8% of the city population), adding pressure to healthcare services already strained by personnel shortages, geographic barriers, and limited resources (Philippine Statistics Authority, 2023). In Talomo District, Davao City, one of the most

densely populated districts, older adults face limited access to medical monitoring, routine check-ups, and daily living assistance; reports showed that a single doctor serves about 150,000 residents in the area (Canedo, 2018). Artificial Intelligence (AI), defined as computational systems that learn from data, recognize patterns, and support decision-making, offers potential to fill these gaps. Integrating AI tools such as wearable monitors, smart-home sensors, and voice assistants into daily routines can enhance safety, enable continuous health monitoring, and promote independence, but their effectiveness ultimately depends on older adults' acceptance; their trust, perceived ease of use, and willingness to adopt such technologies.

On the global scale, many studies have shown both the benefits and challenges of introducing AI to older populations. Research in the United Arab Emirates highlights that AI can improve healthcare access, reduce caregiver burden, and support independent living (Imran & Khan, 2025). Still, acceptance levels vary, as some seniors express optimism while others feel hesitant or resistant due to lack of familiarity or concerns about losing human interaction (Czaja & Ceruso, 2022). Nationally, in Zamboanga, studies have focused mostly on health-related technologies such as telemedicine, telepharmacy, and e-health services. These have proven helpful, but older adults face barriers such as low digital literacy, limited access to devices, unstable internet, and privacy concerns (Gallardo et al., 2024). Locally, a study by Caran et al. (2023) examined how older adults in Davao City adapt to and accept digital technologies in their daily lives. However, there remains a lack of research focusing specifically on the acceptance of AI-integrated tools among elderly residents in areas such as within Talomo District.

There is limited local evidence on how AI technologies are actually used by older residents in urban districts and how patterns of use relate to attitudes and willingness to adopt them. This study would document the current prevalence and types of AI technologies among elderly residents in Talomo District, Davao City, assess levels of acceptance (perceived usefulness, ease of use, and intention to use), and examine associations and commonly reported barriers and facilitators to adoption. The findings would provide practical, locally relevant information for policymakers, health providers,

and community programs considering the role of AI as a complementary tool for supporting elderly care in Talomo.

1.2 Theories and Related Literature

1.2.1 Theories

Technology Acceptance Model (TAM)

Proposed by Fred Davis (1989), the Technology Acceptance Model (TAM) explains technology adoption through two main constructs: perceived usefulness, the belief that a technology enhances performance or well-being; and perceived ease of use, the belief that technology can be used without difficulty. Over time, TAM has been widely applied and validated in health and aging research, consistently showing strong reliability and predictive power in understanding technology adoption behaviors (Yang et al., 2025).

TAM would be achieved in this study because it highlights the key factors influencing older adults' acceptance of AI-enabled health monitoring systems. For seniors, perceived usefulness refers to believing that AI can support health management, safety, and independence, while perceived ease of use relates to concerns about complexity, digital literacy, and learning barriers. Guided by TAM, this study assumes that elderly participants would be more willing to adopt AI-assisted healthcare when they see its benefits in daily life and find it accessible without requiring advanced technical knowledge or constant external support.

Health Belief Model (HBM)

The Health Belief Model (HBM), developed by Irwin M. Rosenstock in 1974, explains health-related behaviors through four key perceptions: susceptibility to health problems, severity of potential health issues, benefits of taking preventive action, and barriers that may hinder action. Later developments added cues to action (triggers that

motivate behavior) and self-efficacy, or confidence in one's ability to perform the health behavior (Dagdostar et al., 2024; Zollo et al., 2024).

Applied to AI-assisted elderly care, HBM provides a framework for understanding how older adults decide to use health monitoring technologies. Adoption depends on whether they perceive themselves at risk of health complications, recognize the seriousness of potential conditions, and believe AI tools can effectively help prevent or manage these risks. The model suggests that elderly individuals who see AI monitoring as beneficial, reliable, and manageable would be more motivated to adopt it, especially when perceived benefits outweigh barriers such as cost, technical difficulty, or distrust in technology.

1.2.2 Related Literature

Artificial Intelligence Systems in Elderly Healthcare

The application of AI in elderly care encompasses a broad range of technologies designed to support independent living and enhance health management. Key applications identified through systematic reviews include smart homes, AI-based monitoring systems, and social robots, which collectively aim to help elderly individuals live independently by anticipating health risks and providing remote healthcare access (Albarqi, 2024). These systems represent a shift towards proactive and preventative care models, leveraging technology to create safer and more supportive living environments. The integration of AI into daily life allows for continuous, unobtrusive monitoring of well-being and raises practical questions about how older adults adopt and accept these systems. This foundation enables a more responsive healthcare ecosystem for aging populations.

AI-powered devices and robotic systems have demonstrated significant capabilities in promoting autonomy among seniors through direct assistance and support. For instance, AI-based devices have been highlighted for their ability to provide early diagnosis, detect falls, and offer mobility assistance, thereby enhancing user independence (Padhan et al., 2023). Similarly, AI robots have proven effective in supporting activities of daily living, offering emotional support, and helping maintain

routines through medication reminders and health monitoring (Mugisha, 2025). These technologies serve as practical tools that directly address common challenges faced by the elderly while also affecting patterns of use and acceptance among target users. Their role extends from physical support to social and cognitive engagement, complementing rather than replacing the essential human aspects of caregiving.

Beyond direct physical assistance, AI in the form of service and social robots offers crucial emotional and practical support, particularly within home care settings. These robots complement traditional care by providing companionship and performing tasks that alleviate the burden on human caregivers (Masala & Giorgi, 2025). By supporting aging in place, these technologies help reduce the need for institutionalization and allow elderly individuals to remain in familiar surroundings. This dual support role is critical for both the emotional well-being of the elderly and the sustainability of caregiving systems, and it shapes how integration efforts should be designed to encourage adoption. The presence of robotic assistants can foster a sense of security and connection.

While AI-enabled systems can deliver highly personalized care and improve interactions between patients and caregivers, their implementation introduces significant ethical challenges. It is crucial to address potential algorithmic biases to ensure equitable care outcomes and to incorporate inclusive design principles that cater to the diverse needs of the elderly population (Olawade et al., 2024). Researchers caution that without careful oversight, these advanced systems could perpetuate existing health disparities. Therefore, the development process must prioritize fairness, transparency, and accountability to build and maintain user trust. Maintaining user trust is paramount for the successful adoption and sustained use of these technologies in sensitive healthcare contexts.

This demonstrates that AI technologies offer transformative potential for enhancing elderly care through continuous monitoring, early intervention, and support for independent living. The successful integration of these systems, however, depends on a balanced approach that pairs technological innovation with human-centered design targeted to elderly users. To be effective, AI implementation must address practical care

needs while preserving user dignity, autonomy, and meaningful human connections; these factors would determine both how integration proceeds and the level of acceptance among older adults. The evidence suggests the promise of AI is clear but that further research is needed to refine implementation strategies and address ethical concerns such as algorithmic bias and the risk of social isolation.

Remote Health Monitoring and Biosensory Technologies

Remote health monitoring has become a cornerstone of modern elderly care, utilizing biosensors embedded in wearable devices to track health indicators continuously. These systems are designed to collect vital signs, including mobility, heart rate, oxygen levels, and blood pressure, without the constant presence of a healthcare provider (Peyroteo et al., 2021). This capability allows for the proactive surveillance of an individual's health status from a distance. The data gathered provides a comprehensive overview of physiological patterns over time, which supports decisions about integration of monitoring into daily routines for older adults. This approach facilitates earlier detection of potential health issues before they become critical.

The increasing prevalence of chronic diseases among the elderly has amplified the importance of e-health systems, with remote patient monitoring being a key component. Such systems are particularly valuable for managing conditions like stroke, arthritis, and asthma, which require ongoing observation and management (El-Rashidy et al., 2021). By enabling continuous data collection, remote monitoring helps clinicians make more informed decisions and adjust treatment plans in a timely manner. This constant connection between patient and provider improves the management of long-term health conditions and shapes how monitoring technologies should be integrated into care pathways. It ultimately leads to better health outcomes and quality of life for elderly patients.

The precision of data collected through remote monitoring is fundamental to its clinical utility. Modern biosensor implementations allow for the accurate recording of vitals, with advanced systems capable of estimating key metrics like blood pressure and heart rate for health evaluation and prediction (Nwibor et al., 2023). The reliability of this data is crucial for healthcare providers who rely on it to assess patient stability and

intervene when necessary. High-quality data minimizes false alarms and builds trust in the technology among both clinicians and users, which in turn affects acceptance and continued use. This focus on accuracy ensures that the monitoring system serves as a dependable tool in the care process.

AI augments the capabilities of remote monitoring systems, enabling continuous and independent care by analyzing real-time vital signs and issuing automated alerts. This allows for immediate notification of caregivers or medical personnel in response to significant changes in a patient's condition without requiring in-person visits (Ahmed et al., 2023). AI algorithms can identify subtle patterns that may indicate an impending health crisis, moving the care model from reactive to predictive. This intelligent automation can improve safety for elderly individuals living alone and influence how readily such systems are adopted in daily life. It provides peace of mind for both the users and their families.

In essence, the convergence of wearable biosensors and AI analytics creates a powerful ecosystem for elderly care. These integrated systems continuously track vital signs, identify concerning symptom patterns, and can predict health deteriorations, all while preserving the user's independence. Evidence strongly supports the clinical and cost-effectiveness of remote monitoring, which has been shown to reduce hospital readmissions and improve chronic disease management. These systems are designed to reinforce traditional healthcare delivery, ensuring that technology supports and assists rather than substitutes the role of human caregivers; successful adoption would depend on both careful integration into routines and user acceptance. However, successful implementation hinges on careful attention to user-friendly technology design, comprehensive user training, and seamless integration into existing healthcare workflows to maximize benefits and overcome barriers to adoption.

Technology Acceptance and Cognitive Support Systems

The successful integration of AI in elderly care is heavily dependent on overcoming significant barriers related to technology acceptance and digital literacy. Research identifies that limited digital skills, concerns about privacy, and non-intuitive user interfaces are primary obstacles to technology adoption among older adults (Tang et

al., 2024). Furthermore, age-related physiological and cognitive changes, along with higher rates of disability or chronic conditions, can affect an individual's ability to interact effectively with new technologies (Czaja & Ceruso, 2022). These challenges necessitate specialized design and implementation approaches tailored to the unique needs of this demographic to improve acceptance and sustained use.

The effectiveness of AI as a support tool is often influenced by how individuals interpret and utilize its recommendations. To better understand this dynamic, frameworks have been developed to model the diverse ways people interact with AI systems, acknowledging that a one-size-fits-all approach is insufficient for AI-assisted decision-making (Lu et al., 2024). Designing systems that can adapt to different user behaviors and preferences is critical for ensuring that AI-driven advice is both understood and trusted. This requires a deeper investigation into the cognitive processes underlying human-AI collaboration and how those processes affect willingness to adopt and integrate AI into daily care routines.

AI, particularly generative AI, holds significant potential to reduce the cognitive and workload burdens for both elderly users and clinicians. By automating routine tasks such as data analysis, scheduling, and information retrieval, these systems can simplify complex clinical activities and daily management routines (Gandhi et al., 2023). This automation frees up cognitive resources, allowing users to focus on more critical tasks and decisions. For clinicians, it can streamline workflows and improve efficiency, which may encourage broader integration of AI tools into standard care practices.

A key application of AI is providing cognitive support to assist with complex decision-making and daily management, thereby enhancing safety and independence. AI-powered solutions have demonstrated success in addressing critical issues like medication adherence by providing timely reminders and simplifying complex regimens (Reichert et al., 2025). These systems also facilitate clearer communication between patients and their healthcare providers by organizing health data and preparing questions for appointments. Such cognitive aids are invaluable for older adults experiencing mild cognitive decline, helping them manage their health effectively. In this way, AI functions

as an assistive aid that works alongside, not in place of, human care and professional oversight.

Successful AI implementation in elderly care is contingent upon addressing technology acceptance barriers through user-centered design, robust digital literacy support, and adaptive systems. The evidence indicates that elderly populations can use AI technologies effectively when the systems feature age-appropriate interfaces, are accompanied by adequate training, and transparently address privacy concerns. By focusing on cognitive support applications such as medication reminders and decision aids, AI can empower older adults, compensate for age-related cognitive changes, and ultimately help them maintain their independence and quality of life; understanding local patterns of integration and acceptance would be essential for effective deployment.

1.3 Conceptual Framework

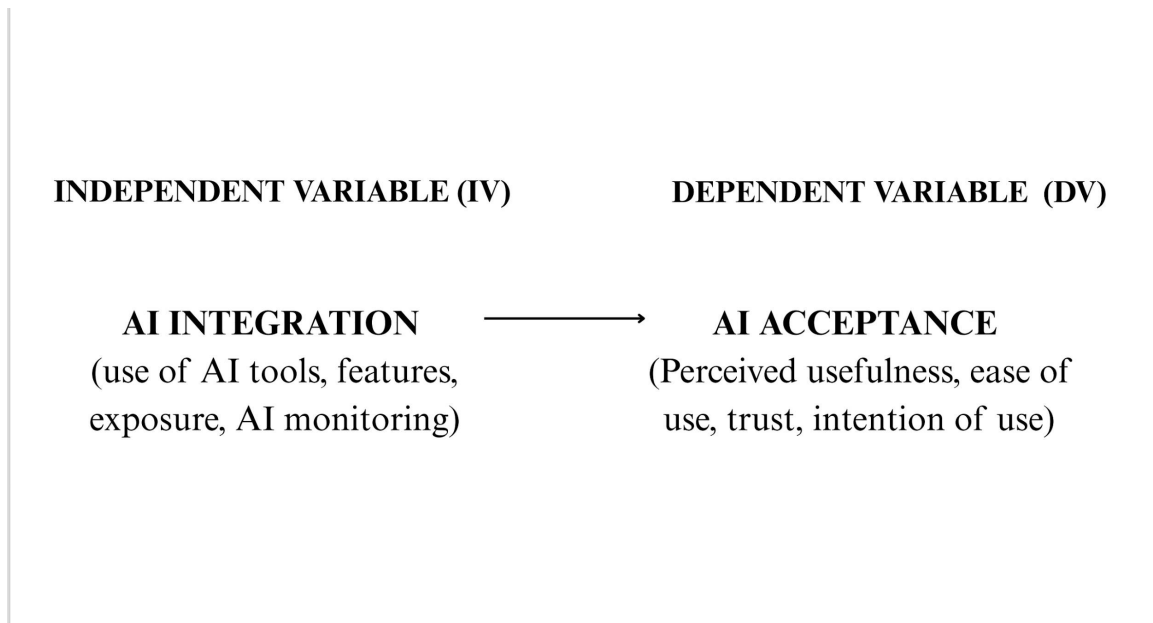


Figure 1. *Conceptual framework of the study*

This study adopts an Independent–Dependent Variable (IDV–DV) framework to clearly present the relationship between the two primary variables examined in the research. In this model, AI Integration serves as the independent variable (IV), while AI Acceptance is treated as the dependent variable (DV). AI Integration refers to the extent

to which AI-enabled tools and functions such as emergency alert systems, health monitoring devices, automated reminders, and communication aids are embedded in the daily routines of the elderly. This includes the frequency of use, type of AI-assisted support received, and the perceived usefulness of these tools in assisting everyday tasks.

Meanwhile, AI Acceptance encompasses elderly individuals' willingness to adopt AI technologies, including their perceptions of usefulness, ease of use, trust in the system, and intention to use AI-assisted support. Guided by widely recognized technology adoption theories, such as the Technology Acceptance Model (TAM), the framework assumes that older adults who experience higher levels of AI integration in their daily lives may likewise demonstrate greater acceptance toward such technologies. This occurs as exposure and familiarity can influence perceived usefulness and reduce barriers related to complexity, anxiety, or uncertainty.

By using the IDV–DV model, the framework aligns with the descriptive–correlational research design of the study, which seeks to determine whether a significant relationship exists between AI integration and AI acceptance among elderly residents in Talomo District, Davao City. Unlike process-based models, this approach focuses directly on how one variable influences another without implying sequential stages or system flows. The structure reflects the study's intent to measure existing conditions and examine statistical associations rather than evaluate a step-by-step intervention process. Thus, the conceptual framework effectively captures the core relationship at the center of the research inquiry: the extent to which AI integration predicts or influences AI acceptance among the elderly.

1.4 Objectives of the Study and Hypothesis

The general objective of this study is to determine the relationship between the level of AI integration and the acceptance of AI among elderly residents in Talomo, Davao City. Specifically, the study aims to:

1. To assess the extent of AI integration in elderly care within Talomo, Davao City.
2. To measure the level of acceptance of AI among elderly residents in Talomo, Davao City.
3. To examine the significant relationship between AI integration and the acceptance of AI among elderly residents in Talomo, Davao City.

Based on these objectives, the study hypothesizes that:

H₀: There is no significant relationship between AI integration and the acceptance of AI among elderly residents in Talomo, Davao City.

H₁: There is a significant relationship between AI integration and the acceptance of AI among elderly residents in Talomo, Davao City.

1.5 Significance of the Study

This study would be beneficial to **elderly residents**, as it would provide insight into how AI technologies can be tailored to their needs and preferences, ensuring that integration is both relevant and acceptable. **Family members and caregivers** may also benefit by gaining a deeper understanding of how elderly individuals perceive and accept AI, which can guide them in supporting older relatives in adopting technology. Healthcare professionals and administrators in Davao City may use the findings to better plan AI-assisted programs and identify areas where acceptance barriers need to be addressed. **Local policymakers and government agencies** can benefit by using the study results to design evidence-based policies that support accessible, equitable, and culturally appropriate AI integration for elderly care in the city. Finally, **future researchers** can build on these findings to conduct more in-depth, targeted, and longitudinal studies on the acceptance, adoption, usage, and long-term impact of Artificial Intelligence technology on the quality of life, independence, and social connectivity of older adults.

1.6 Scope and Delimitation

This study has been limited to elderly respondents aged 60 years old and above who permanently reside in Talomo District, Davao City, and who would be capable of

giving informed consent. The findings would be geographically bound to this district and therefore may not fully represent the experiences of elderly individuals in other parts of Davao City or the Philippines. The research would also be confined to data gathered within the period of January to July 2025, which would restrict its applicability to conditions, programs, and AI-related initiatives existing during this timeframe. Moreover, the study would only focus on the variables of AI-enabled health support and acceptance among the elderly, excluding other possible factors such as socioeconomic status, digital literacy, and cultural influences unless they emerge incidentally from the responses.

II. Methodology

2.1 Research Design

This study would employ a descriptive-correlational research design, which would be appropriate for examining the relationship between AI integration and the acceptance of AI among elderly residents in Talomo, Davao City. A descriptive-correlational design is used to measure and analyze the degree of association between two or more variables without manipulating them, making it suitable when experimental control is not feasible (Creswell & Creswell, 2023). In this study, the design would allow the researchers to determine how the extent of AI integration in elderly care is related to the level of acceptance among elderly participants, while also describing their demographic and contextual characteristics. By utilizing this approach, the study can generate empirical evidence on patterns of acceptance and integration, providing insights into whether higher levels of AI integration correspond with greater acceptance among the elderly population in Talomo District, Davao City.

2.2 Sampling Design, Respondents, and Locale

This study would employ purposive sampling to select 30 elderly respondents aged 60 years and above from Barangay Bago Aplaya, Talomo District, Davao City. Respondents would be permanent residents of Bago Aplaya, cognitively capable of understanding the survey, and able to interact with basic technology. Those with severe cognitive impairment or terminal illnesses would be excluded to maintain data reliability.

The sample size ($n = 30$) is computed using Slovin's formula $n = \frac{N}{1 + Ne^2}$, where N refers to the estimated elderly population in Barangay Bago Aplaya (≈ 763) based on local demographic data, and the margin of error ($e = 0.179$) is set to reasonably limit possible differences between the sample and the total elderly population while ensuring the number of respondents remains practical and manageable for data collection within the community. Purposive sampling is appropriate for correlational-descriptive designs because it targets individuals who best represent the population under study and ensures that only those relevant to the research objectives are included (Denieffe, 2020). Talomo District comprises 14 barangays, including Bago Aplaya (the chosen site). The selection of Bago Aplaya is justified by its sizable population within Talomo and by the presence of an elderly care home and organized senior groups, which provide access to the target population for exploratory analysis of relationships between AI integration and acceptance among older adults.

2.3 Instrument and Procedures

The study used the Elderly AI Integration and Acceptance Questionnaire, a composite tool that integrated items from established instruments: the Katz Index of Independence in Activities of Daily Living for functional independence (Rathnayake et al., 2023), the WHOQOL-BREF for health-related quality of life (Gil-Lacruz et al., 2022), and a technology acceptance scale based from the Technology Acceptance Model, focusing on perceived usefulness, ease of use, and trust (Yang et al., 2025). Data collection would follow five steps: (1) search for and identify one to two elderly homes within barangays across Talomo District (depending on participant availability and capability); (2) contact the selected elderly homes through calls and email to introduce the researchers, the school, and the purpose of the study, and request permission to administer the survey, while preparing tokens of appreciation such as adult diapers; (3) schedule a specific date and time for the visit and conduct the on-site data gathering by administering the Elderly AI Integration and Acceptance Questionnaire through self-report or assisted interviews, depending on the literacy and capabilities of the elderly participants; (4) review the completed questionnaires on-site to ensure completeness and

accuracy before securing them for documentation; and (5) encode all responses into a spreadsheet for organization and statistical analysis. Interpretation of scores is based on established scales: the Katz Index ranges from 0 to 6, with 6 indicating full independence, 4 moderate dependence, and 2 or below severe dependence; the WHOQOL-BREF produces domain scores (physical, psychological, social, and environmental) scaled from 1 to 5, where higher scores reflect better quality of life; and the technology acceptance items use a 5-point Likert scale, with higher means representing stronger acceptance of AI integration in elderly care.

2.4 Data Analysis

The study would utilize descriptive statistics such as frequencies, percentages, means, and standard deviations to summarize the demographic characteristics of respondents and describe their levels of functional independence, quality of life, and AI acceptance, directly addressing the descriptive objectives of the study. To examine the inferential objective, Person's correlation analysis would be applied to determine whether a significant relationship exists between AI integration and the acceptance of AI among elderly residents in Talomo District, Davao City. These statistical tools are appropriate because descriptive measures provide a clear overview of participant profiles and perceptions, while correlation analysis allows for testing the hypothesized association between the main variables. All data would be processed using JASP software, with the significance level set at $\alpha = 0.05$ to guide the interpretation of results, with the help of a qualified statistician. Additionally, Objective 3 of this study will be evaluated through ANCOVA (Analysis of Covariance) to test the result between the null hypothesis and the alternative hypothesis.

III. Results and Discussion

3.1 Level of AI Integration in Elderly Care

The table below summarizes the aggregated measure of AI integration in elderly care among the sample of residents from Barangay Bago Aplaya, Talomo District, Davao City. Respondents ($N = 15$) rated nine items that capture practical AI uses (e.g.,

medication/appointment reminders, alerting caregivers of emergencies, monitoring for safety and improving quality of care). Each item's mean and standard deviation were computed and an overall integration score was calculated; the overall mean indicates a moderate level of AI presence/impact as experienced by respondents.

Table 1

Level of AI Integration in Elderly Care

Indicators	Mean	SD	Interpretation
Use of AI in health monitoring	3.54	1.01	Moderate
Use of AI in daily assistance	3.48	1.08	Moderate
Awareness of AI technologies	3.67	1.03	Moderate
Accessibility of AI devices	3.45	1.12	Moderate
Overall Mean	3.54	1.06	Moderate

The data show a moderate-to-positive level of AI integration in elderly care among the 15 respondents from Talomo. The composite AI integration mean is 3.54 (SD = 1.06) on the measurement scale used, with the highest item mean being emergency alerts to caregivers (B2, M = 4.20) and strong scores for staying connected and reducing caregiver stress (B4 M = 4.13; B5 M = 4.07). These values indicate that within this sample, AI-enabled functions that address safety, connectivity, and caregiver support are the most salient perceived benefits. The spread suggests moderate agreement among respondents rather than wide divergence due to the standard deviations being 1.06. This overall mean indicates that respondents generally agreed that AI tools are already present to a moderate extent in their daily care routines.

The pattern observed among the elderly respondents in Bago Aplaya (Talomo District), where there are stronger perceived benefits for emergency alerts, connection,

and caregiver stress reduction, aligns with broader findings that show older adults and their family networks value AI and monitoring technologies primarily for safety, timely alerts, and the preservation of independence. Ma et al. (2022) notes that AI systems increase perceived safety and enable remote monitoring. These systems are viewed positively when usability and reliability are adequate, particularly when they support fall detection, medication reminders, or immediate emergency intervention.

The results suggest that introducing or expanding AI features centered on emergency detection, communication tools, and monitoring that supports caregivers may receive the strongest endorsement from elderly residents and their families in Talomo. Programs and interventions should prioritize reliable alerting systems, straightforward user interfaces, and clear instructions or training to ensure consistent use. From a public-health and clinical perspective, the combination of moderate integration and moderate acceptance indicates that there is real potential for improved safety and coordinated elderly care. However, the effectiveness of these AI tools would depend on proper implementation, digital literacy support, and measures that protect the privacy of elderly users.

These conclusions should be interpreted with caution because the sample was small ($N = 15$) and limited to Bago Aplaya, Talomo District, which restricts generalizability. Factors such as social desirability, prior exposure to technology, or selection bias may have influenced the ratings, since individuals who already use or favor AI could be overrepresented. Additionally, although acceptance was generally moderate, the higher variability in the acceptance scores (SD near 1.0) indicates diverse attitudes toward AI, which aligns with literature showing that accessibility, trust, and digital competency influence adoption among older adults. To strengthen future research, larger samples, mixed methods, and follow-up assessments are recommended to determine whether perceived benefits lead to long-term, sustained use of AI in elderly care.

3.2 Level of AI Acceptance Among Elderly Residents

Table 2

Level of AI Acceptance Among Elderly Residents

Indicator	Mean	SD	Interpretation
Willingness to use AI tools	3.70	0.96	High
Trust in AI systems	3.45	1.06	Moderate
Confidence in AI-assisted care	3.59	1.07	Moderate
Perceived usefulness	3.70	1.01	High
Overall Mean	3.63	1.04	High

The results show that the overall level of AI acceptance among the elderly participants is moderate to high, with an overall mean score of 3.63 (SD = 1.04). This indicates that most respondents generally view AI-assisted tools and technologies positively, although some still express caution or uncertainty.

Among the indicators, Willingness to Use AI Tools received the highest rating (M = 3.70, SD = 0.96, High), showing that many elderly participants are open to trying or using AI technologies in their daily activities. Perceived Usefulness also scored high (M = 3.70, SD = 1.01, High), suggesting that the elderly recognize the potential benefits of AI in supporting health monitoring, safety, and daily care.

Meanwhile, Confidence in AI-Assisted Care (M = 3.59, SD = 1.07, Moderate) and Trust in AI Systems (M = 3.45, SD = 1.06, Moderate) were rated moderately. These results imply that although the elderly see value in AI, some remain unsure about its reliability or feel hesitant due to unfamiliarity with advanced technologies.

Overall, the findings indicate that elderly residents in Talomo District show a generally positive but cautious acceptance of AI. High willingness and perceived

usefulness drive acceptance, while moderate trust and confidence levels reflect the need for orientation, exposure, and clearer guidance when implementing AI-assisted support for the elderly. The results were analyzed using descriptive statistics (frequencies, percentages, means, and standard deviations) to determine the level of AI acceptance among elderly participants in Talomo District. As shown in the computed values, the overall AI acceptance score yielded a mean of 3.63 (SD = 1.04), indicating a moderate to high level of acceptance.

Among the indicators, Willingness to Use AI Tools obtained the highest score (M = 3.70, SD = 0.96, High). This suggests that elderly respondents are generally open to trying or utilizing AI technologies to support daily living and healthcare needs. Perceived Usefulness also received a high interpretation (M = 3.70, SD = 1.01), indicating that participants believe AI can provide practical advantages, such as improved monitoring, convenience, and task support.

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Meanwhile, Confidence in AI-Assisted Care scored moderately (M = 3.59, SD = 1.07), reflecting that while elderly participants recognize the potential value of AI, some remain unsure about relying on AI-driven systems for personal assistance. Trust in AI Systems, with a mean of 3.45 (SD = 1.06), also received a moderate interpretation, suggesting that familiarity, reliability, and safety remain important factors influencing acceptance. These moderate ratings align with previous findings stating that trust and system reliability are common concerns among aging populations adopting new technologies.

Overall, these results imply that elderly residents exhibit positive but cautious acceptance of AI. High willingness and perceived usefulness indicate readiness to adopt

AI tools, whereas moderate trust and confidence suggest a need for orientation, exposure, and clear guidance when implementing AI-assisted technologies within elderly care settings.

The lower levels of trust and confidence, despite high willingness to use AI tools and strong perceived usefulness, may be attributed to the elderly participants' limited prior exposure to AI systems. Many respondents expressed initial hesitation or uncertainty when encountering AI-assisted technologies for the first time, which is consistent with findings showing that unfamiliarity can reduce trust in emerging technologies. This pattern contrasts with more technologically exposed groups in developed regions, where continuous interaction with digital systems contributes to higher confidence and smoother adoption. These results emphasize the important role of familiarity, guided practice, and user education in shaping acceptance outcomes among elderly individuals.

3.3 Relationship Between AI Integration and AI Acceptance

This examines the relationship between AI Integration (Usage) and AI Acceptance among the elderly residents, while controlling for Quality of Life (QoL) as a covariate. An Analysis of Covariance (ANCOVA) was utilized to determine if AI usage significantly affects acceptance scores when the variance attributed to the respondents' general quality of life is removed. This statistical approach ensures that the influence of the respondents' health and well-being is accounted for, providing a clearer picture of how integration status alone impacts their willingness to accept AI technologies.

Table 3.1

Descriptive Statistics of AI Acceptance by Integration Group

Integration Group	N	Mean	Std. Deviation
Not Integrated (Non-Users)	9	3.86	0.76
Integrated (Users)	6	3.89	0.66

Total	15	3.87	0.69
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Table 3.2

Tests of Between-Subjects Effects (ANCOVA Summary)

Source	Type III Sum of Squares	df	Mean Square	F	Sig. (p)
Quality of Life (Covariate)	3.389	1	3.389	12.155	0.004*
AI Integration (Group)	0.022	1	0.022	0.081	0.781
Error	3.346	12	0.279		
Corrected Total	6.757	14			
*Significant at $p < 0.05$					

Table 3.3

Estimated Marginal Means (Adjusted for Quality of Life)

Integration Group	Mean	Std. Error	95% Confidence Interval
Not Integrated (Non-Users)	3.91	0.18	[3.51, 4.30]
Integrated (Users)	3.83	0.22	[3.35, 4.30]
Covariates appearing in the model are evaluated at the following values: Quality of Life = 3.63.			

The ANCOVA results in Table 3.2 reveal that while AI Integration ($F=0.081, p=0.781$) does not have a significant effect on acceptance, the covariate Quality of Life ($F=12.155, p=0.004$) is a highly significant predictor. This means that the respondents' acceptance of AI is driven more by their general well-being and health satisfaction than by whether they currently own or use the technology. The Estimated

Marginal Means in Table 3.3 further confirm this, showing that once Quality of Life is controlled for, the acceptance scores of Non-Users ($M_{adj}=3.91$) and Users ($M_{adj}=3.83$) remain statistically indistinguishable, leading to the acceptance of the null hypothesis.

These findings align with literature emphasizing the role of health status in technology adoption. El-Rashidy et al. (2021) note that e-health systems are particularly valuable for managing chronic diseases like stroke or arthritis, suggesting that individuals with specific health needs—often reflected in their Quality of Life scores—may be more primed to accept these tools. The significant relationship between Quality of Life and acceptance in this study suggests that residents who are acutely aware of their daily living needs are more engaged with the concept of AI assistance, viewing it as a practical tool for health management rather than a novelty.

Furthermore, the lack of significant difference in acceptance between users and non-users supports the notion that barriers to AI integration are often external rather than attitudinal. Tang et al. (2024) identify that limited digital skills and non-intuitive user interfaces are primary obstacles to technology adoption among older adults, rather than a fundamental dislike of the technology itself. The fact that non-users in Talomo reported high acceptance scores ($M=3.86$) comparable to users suggests they recognize the potential benefits described by Ahmed et al. (2023), such as automated alerts and improved safety, but likely face logistical or technical barriers preventing actual integration.

The implication of these results is that future AI interventions in the district should be framed around health enhancement rather than technical sophistication. Since Quality of Life is the primary driver of acceptance, policymakers and caregivers should highlight how AI leads to better health outcomes and independence, as suggested by the remote monitoring literature. Programs aiming to increase integration should focus on removing the "digital literacy" and access barriers identified by Tang et al. (2024), as the willingness to adopt the technology (acceptance) is already present in the non-user population.

To account for the non-significant effect of integration despite high acceptance, trust and design factors must be considered. Olawade et al. (2024) caution that without careful oversight and inclusive design, advanced systems could perpetuate health disparities or fail to build necessary user trust. It is likely that while the elderly respondents theoretically accept AI as useful, concerns about privacy, "algorithmic biases," or the lack of "human-centered design" prevent them from transitioning from acceptance to actual daily usage.

IV. Conclusions and Recommendations

4.1 Summarizing/Concluding the Study

This study aimed to determine the relationship between the level of Artificial Intelligence (AI) integration and its acceptance among elderly residents in Talomo District, Davao City. The findings revealed a moderate level of AI integration ($M=3.54$), with emergency alerts and connectivity being the most utilized features, while the level of AI acceptance was found to be moderate-to-high ($M=3.63$), indicating that elderly residents are generally open to technology that ensures their safety. Crucially, the Analysis of Covariance (ANCOVA) demonstrated no significant relationship between AI integration and acceptance ($p=0.781$); instead, Quality of Life emerged as the significant driver of acceptance ($p=0.004$). This implies that an elderly individual's acceptance of AI is motivated more by their health status and daily living needs than by their current ownership or usage of the technology, suggesting that barriers to integration are likely external (e.g., access or cost) rather than a lack of willingness.

4.2 Evaluating the Study

The primary limitation of this study was the small final sample size ($N=15$), which fell short of the targeted number due to recruitment difficulties and the temporary closure of the original research site for repairs. This reduced sample size limited the statistical power of the analysis and the generalizability of the findings to the broader elderly population in Davao City. Consequently, the results, particularly the lack of a significant link between integration and acceptance, should be interpreted as preliminary

insights specific to the surveyed community in Barangay Bago Aplaya rather than conclusive evidence for the entire district.

4.3 Writing The Recommendations

Based on the finding that Quality of Life drives acceptance, it is recommended that caregivers and healthcare providers frame AI interventions around health enhancement and safety benefits rather than technical sophistication. Policymakers should focus on addressing the gap between high willingness and moderate integration by launching programs that improve digital literacy and device accessibility for seniors. Finally, future researchers are encouraged to validate these findings by securing larger, more diverse samples and employing longitudinal designs to track how changes in health status influence technology adoption over time.

References

- Ahmed, S., Irfan, S., Kiran, N., Masood, N., Anjum, N., & Ramzan, N. (2023). Remote health monitoring systems for elderly people: a survey. *Sensors*, 23(16), 7095. <https://doi.org/10.3390/s23167095>
- Albarqi, M. (2024). Exploring the Effectiveness of Technology-Assisted Interventions for Promoting Independence in Elderly Patients: A Systematic Review. *Healthcare (Basel, Switzerland)*, 12(21), 2105. <https://doi.org/10.3390/healthcare12212105>
- Alshamrani, M. (2021). IoT and artificial intelligence implementations for remote healthcare monitoring systems: A survey. *Journal of King Saud University - Computer and Information Sciences*, 34(8), 4687–4701. <https://doi.org/10.1016/j.jksuci.2021.06.005>
- Berndt, A. (2020). Sampling methods. *Journal of Human Lactation*, 36(2), 224–226. <https://doi.org/10.1177/0890334420906850>
- Canedo, K. (2018). Davao villages lack medical staff. SunStar Publishing Inc. <https://www.sunstar.com.ph/davao/local-news/davao-villages-lack-medical-staff>
- Campbell, J., Buchan, J., Chu, C., Bianchi, A., Hoey, J., & Khan, S. (2024). User perception of smart home surveillance among adults aged 50 years and older: Scoping review. *JMIR mHealth and uHealth*, 12, e48526. <https://doi.org/10.2196/48526>
- Caran, H., Parcasio, J., & Singson, J. (2023). Digital inclusion of baby boomers in Davao City. <https://repository.umindanao.edu.ph/handle/20.500.14045/1278>.
- Cavallo, F., Esposito, R., Limosani, R., Manzi, A., Bonassi, S., & Dario, P. (2018). Robotic services acceptance in smart environments with older adults: User satisfaction and acceptability study. *Journal of Medical Internet Research*, 20(9), Article e169. <https://doi.org/10.2196/jmir.9112>
- Choudhury, A., Renjilian, E., & Asan, O. (2020). Use of machine learning in geriatric clinical care for chronic diseases: a systematic literature review. *JAMIA Open*, 3(3), 459–471. <https://doi.org/10.1093/jamiaopen/ooaa034>
- Creswell, J. W., & Creswell, J. D. (2023). *Research Design - International Student Edition: Qualitative, Quantitative, and Mixed Methods Approaches*.

- Czaja, S., & Ceruso, M. (2022). The promise of artificial intelligence in supporting an aging population. *Journal of Cognitive Engineering and Decision Making*, 16(4), 182–193. <https://doi.org/10.1177/15553434221129914>
- Dadgostar, P., Qin, Q., Cui, S., Ashcraft, L., & Yousefi-Nooraie, R. (2024). Using social media to disseminate Behavior Change Interventions: A Scoping Review of Systematic Reviews (Preprint). *Journal of Medical Internet Research*. <https://doi.org/10.2196/57370>
- Denieffe, S. (2020). Commentary: Purposive sampling: complex or simple? Research case examples. *Journal of Research in Nursing*, 25(8), 662–663. <https://doi.org/10.1177/1744987120928156>
- De Vocht, F., Katikireddi, S., McQuire, C., Tilling, K., Hickman, M., & Craig, P. (2021). Conceptualising natural and quasi experiments in public health. *BMC Medical Research Methodology*, 21(1). <https://doi.org/10.1186/s12874-021-01224-x>
- Dujali, A., Parrilla, P., N, A., Carr, C., Z, J., A, K., Molina, M., T, M., Obeja, O., Vidal, V., E, N., Navarro, N., F, P., Faller, F., & M, E. (2023). Acceptability of telemedicine services among hypertensive patients in Davao City, Philippines. *International Journal of Research Publication and Reviews*, 4(6), 446–455. <https://doi.org/10.55248/gengpi.4.623.44287>
- Sarmiento, R., Overgaard, S., Gai, C., Overgaard, J., & Ohde, J. (2025). Guiding responsible AI in healthcare in the Philippines. *NPJ Digital Medicine*, 8, Article 338. <https://doi.org/10.1038/s41746-025-01755-3>.
- Talukder, M., Sorwar, G., Bao, Y., Palash, A., & Ahmed, J. (2019). Predicting antecedents of wearable healthcare technology acceptance by elderly: A combined SEM-Neural Network approach. *Technological Forecasting and Social Change*, 152, Article 119793.
- El-Rashidy, N., El-Sappagh, S., Islam, S., El-Bakry, H., & Abdelrazek, S. (2021). Mobile health in Remote Patient Monitoring for Chronic Diseases: Principles, trends, and challenges. *Diagnostics*, 11(4), 607. <https://doi.org/10.3390/diagnostics11040607>
- Gallardo, M., Dela Torre, I., & Ebardo, R. (2024). The role of initial trust in the behavioral intention to use telemedicine among Filipino older adults. *Gerontology & Geriatric Medicine*, 10, 1–11. <https://doi.org/10.1177/23337214231222110>

- Gandhi, T., Classen, D., Sinsky, C., Rhew, D., Garde, N., Roberts, A., & Federico, F. (2023). How can artificial intelligence decrease cognitive and work burden for front line practitioners? *JAMIA Open*, 6(3). <https://doi.org/10.1093/jamiaopen/ooad079>
- Gil-Lacruz, M., Cañete-Lairla, M., Navarro, J., Montaña-Espinoza, R., Espinoza-Santander, I., & Osorio-Parraguez, P. (2022). Validation of the WHOQOL-BREF Quality of Life Questionnaire in an Urban Sample of Older Adults in a Neighbourhood in Zaragoza (Spain). *Healthcare (Basel, Switzerland)*, 10(11), 2272. <https://doi.org/10.3390/healthcare10112272>
- Ho, A. (2020). Are we ready for artificial intelligence health monitoring in elder care? *BMC Geriatrics*, 20(1). <https://doi.org/10.1186/s12877-020-01764-9>
- Joseph, J. (2025). Designing for dignity: Ethics of AI surveillance in older adult care. *Frontiers in Digital Health*, 7, Article 1643238. <https://doi.org/10.3389/fdgth.2025.1643238>
- Imran, R., & Khan, S. (2025). A systematic review on the efficacy of artificial intelligence in geriatric healthcare: a critical analysis of current literature. *BMC Geriatrics*, 25(1). <https://doi.org/10.1186/s12877-025-05878-w>
- Lacsa, J. (2025). When The Heart and Lungs Fail Together: A Wake-Up call for aging populations in the Philippines and beyond. *International Journal of Cardiology Cardiovascular Risk and Prevention*, 26, 200450. <https://doi.org/10.1016/j.ijcrp.2025.200450>
- Lu, Z., Mahmoo, S., Li, Z., & Yin, M. (2024). Mix and Match: Characterizing Heterogeneous Human Behavior in AI-assisted Decision Making. *Proceedings of the AAAI Conference on Human Computation and Crowdsourcing*, 12, 95–104. <https://doi.org/10.1609/hcomp.v12i1.31604>
- Kullgren, J., & Brewer, R. (2025). Older adults and AI: U-M poll suggests a wary welcome [Poll report]. University of Michigan National Poll on Healthy Aging. <https://news.umich.edu/older-adults-and-ai-u-m-poll-suggests-a-wary-welcome/>
- Ma, B., Yang, J., Wong, F., Wong, A., Ma, T., Meng, J., Zhao, Y., Wang, Y., & Lu, Q. (2022). Artificial intelligence in elderly healthcare: A scoping review. *Ageing Research Reviews*, 83, 101808. <https://doi.org/10.1016/j.arr.2022.101808>

- Masala, G., & Giorgi, I. (2025). Artificial intelligence and assistive robotics in healthcare services: Applications in Silver Care. *International Journal of Environmental Research and Public Health*, 22(5), 781. <https://doi.org/10.3390/ijerph22050781>
- Mugisha, K. (2025). AI-Driven Robots for Elderly Care: Enhancing Quality of life. *Research Output Journal of Biological and Applied Science*, 5(2), 44–49. <https://doi.org/10.59298/rojbas/2025/524449>
- Nwibor, C., Haxha, S., Ali, M., Sakel, M., Haxha, A., Saunders, K., & Nabakooza, S. (2023). Remote Health monitoring system for the estimation of blood pressure, heart rate, and blood oxygen saturation level. *IEEE Sensors Journal*, 23(5), 5401–5411. <https://doi.org/10.1109/jsen.2023.3235977>
- Olawade, D., Bolarinwa, O., Adebisi, Y., & Shongwe, S. (2024). The Role of Artificial Intelligence in Enhancing Healthcare for People with Disabilities. *Social Science & Medicine*, 364, 117560. <https://doi.org/10.1016/j.socscimed.2024.117560>
- Padhan, S., Mohapatra, A., Ramasamy, S., & Agrawal, S. (2023). Artificial intelligence (AI) and robotics in elderly healthcare: Enabling independence and quality of life. *Cureus*. <https://doi.org/10.7759/cureus.42905>
- Parkinson, M., Smith, R., Tanious, K., Curtis, F., Doherty, R., Colon, L., Chena, L., Horrocks, S., Harrison, M., Fertleman, M., Dani, M., Barnaghi, P., Sharp, D., & Li, L. (2024). Experiences with home monitoring technology in older adults with traumatic brain injury: a qualitative study. *BMC Geriatrics*, 24(1), 796. <https://doi.org/10.1186/s12877-024-05397-0>
- Peyroteo, M., Ferreira, I., Elvas, L., Ferreira, J., & Lapão, L. (2021). Remote Monitoring Systems for Patients with Chronic Diseases in Primary Health Care: Systematic review. *JMIR Mhealth and Uhealth*, 9(12), e28285. <https://doi.org/10.2196/28285>
- Philippine Statistics Authority. (2023). *Age and Sex Distribution in Davao City (2020 Census of Population and Housing)*. <https://rso11.psa.gov.ph/content/age-and-sex-distribution-davao-city-2020-census-population-and-housing>
- Rathnayake, N., Karunadasa, R., Abeygunasekara, T., De Zoysa, W., Palangasinghe, D., & Lekamwasam, S. (2023). Katz index of activities of daily living in assessing

- functional status of older people: Reliability and validity of Sinhala version. *Dialogues in health*, 2, 100134. <https://doi.org/10.1016/j.dialog.2023.100134>
- Reichert, L., Zhang, Z., Von Oswald, E., Liu, Y., Rogers, Y., & Hassib, M. (2025). AI, help me think—but for myself: assisting people in complex Decision-Making by providing different kinds of cognitive support. *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems (CHI '25)*, 1–19. <https://doi.org/10.1145/3706598.3713295>
- Secinaro, S., Calandra, D., Secinaro, A., Muthurangu, V., & Biancone, P. (2021). The role of artificial intelligence in healthcare: a structured literature review. *BMC Medical Informatics and Decision Making*, 21(1). <https://doi.org/10.1186/s12911-021-01488-9>
- Shang, X., Liu, Z., Gong, C., Hu, Z., Wu, Y., & Wang, C. (2024). Knowledge mapping and evolution of research on older adults' technology acceptance: a bibliometric study from 2013 to 2023. *Humanities and Social Sciences Communications*, 11(1). <https://doi.org/10.1057/s41599-024-03658-2>
- Tan, R. C., Castilla, K., Garcia, A., Macatangay, K., de la Vega, S., Serafico, M., Mensink, M., & de Groot, L. (2025). An overview of the healthy aging program for PinoY (HAPPY) senior citizens research: A cross-sectional study among community-dwelling older Filipinos. *AIMS public health*, 12(2), 536–556. <https://doi.org/10.3934/publichealth.2025029>
- Tang, A., Rankin, K., Ceron, G., Miramontes, S., Mills, H., Roger, J., Zeng, B., Nelson, C., Soman, K., Woldemariam, S., Li, Y., Lee, A., Bove, R., Glymour, M., Aghaeepour, N., Oskotsky, T., Miller, Z., Allen, I., Sanders, S. J., . . . Sirota, M. (2024). Leveraging electronic health records and knowledge networks for Alzheimer's disease prediction and sex-specific biological insights. *Nature Aging*, 4(3), 379–395. <https://doi.org/10.1038/s43587-024-00573-8>
- Wong, A., Lee, J., Zhao, Y., Lu, Q., Yang, S., & Hui, V. (2025). Exploring older adults' perspectives and acceptance of AI-driven health technologies: Qualitative study. *JMIR Aging*, 8, e66778. <https://doi.org/10.2196/66778>

- Yang, H., Lee, J., & Lee, W. (2025). Factors influencing healthcare technology acceptance in older adults through TAM and UTAUT: Meta-Analysis. (Preprint). *Journal of Medical Internet Research*, 27, e65269. <https://doi.org/10.2196/65269>
- Yu, S., & Chen, T. (2024). Understanding older adults' acceptance of chatbots in healthcare delivery: An extended UTAUT model. *Frontiers in Public Health*, 12, Article 1435329. <https://doi.org/10.3389/fpubh.2024.1435329>
- Zhan, X., Abdi, N., Seymour, W., & Such, J. (2024). Healthcare Voice AI Assistants: Factors influencing trust and Intention to use. *arXiv (Cornell University)*. <https://doi.org/10.48550/arxiv.2401.04543>
- Zollo, F., Baronchelli, A., Betsch, C., Delmastro, M., & Quattrociocchi, W. (2024). Understanding the complex links between social media and health behaviour. *BMJ*, e075645. <https://doi.org/10.1136/bmj-2023-075645>

APPENDIX A
Statement of Project Member Contribution

	SPECIFIC TASKS IN DETAIL					
Name of Member	Introduction	Methods	Results and Discussion	Conclusions and Recommendations	Other Parts	% of Contribution to the Whole Project
Mendoza, Gary Isaac (Leader)	Assigned everyone to their corresponding and fitting tasks Did 1.1 partial and revised Did 1.2.2 partial and revised Assisted 1.3 revised Did 1.4 partial and revised Assisted 1.5 revised Assisted 1.6 partial and revised	Heavily contributed on the entirety on chapter 2, especially on reworks	Assisted on 3.1, 3.2, 3.3 in technical and statistical matters and monitored for any errors and discrepancies	Revised 4.1, 4.2, 4.3	Provided rework for questionnaire and letters of informed consent	96%
Corolla, Lord Christian (Member)	Drafted and created the introduction; researched and selected the theoretical frameworks; wrote one RRL section		Interpreted the results for Objective 3.3; drafted and revised the discussion on the relationship	Participated in summarizing the major findings and highlighting the study's contributions	Partially contributed to the Scope and Delimitation; assisted in overall document formatting	94%

	SPECIFIC TASKS IN DETAIL					
Name of Member	Introduction	Methods	Results and Discussion	Conclusions and Recommendations	Other Parts	% of Contribution to the Whole Project
	(Artificial Intelligence Systems in Elderly Healthcare); drafted, revised, and finalized the conceptual framework		between AI integration and acceptance		and proofreading Helped with gathering the onsite data	
Domider, Ellie Reuben (Member)	Contributed by finding research for the international part of the study Helped with the Technology Acceptance and Cognitive Support Systems in the RRL	Made the 2.4 data analysis Contributed In the research design and the instruments and procedures	Completed 3.2 Level of AI Acceptance Among Elderly Residents	Helped with gathering the data	Helped with gathering the onsite data	80%
Sagpang, Justin Derrick (Member)	Contributed to forming the Significance of the Study, added Remote Health Monitoring and Biosensory Technologies in RRL and inputted the HBM in the Theories.	Helped revised a part in Data Analysis	Completed 3.1 Level of AI Integration in Elderly Care	Wrote down the study recommendations , highlighting importance of future research	Provided some hard copies of the questionnaires for the survey	80%

APPENDIX B

Letter of Informed Consent



November 6, 2025

Dear Respondents:
Greetings!

We, the researchers from Mapua Malayian Colleges Mindanao of Grade 12 - KNUTH, are currently conducting a study entitled "**The Relationship between Artificial Intelligence Integration and its Acceptance among Elderly Residents in Talomo District, Davao City**". This study's main objective is to determine the relationship between the level of Artificial Intelligence (AI) integration and the acceptance of AI among elderly residents in Talomo, Davao City. Specifically, the research aims to assess the current extent of AI use in elderly care within Talomo and measure residents' levels of acceptance to understand how these technologies can be best tailored to support their needs and preferences. Our group is positive that your valuable insights and contributions will greatly aid our research efforts and help us gain a deeper understanding of our topic.

We want to assure you that your privacy and confidentiality are of utmost importance to us. All information collected during the course of this study will be treated with strict confidentiality, ensuring that your identity remains completely anonymous. No personal identifying information will be shared or disclosed without your explicit consent.

As a participant, you can expect the following:

1. Your participation is entirely voluntary, and you can withdraw at any time without penalty.
2. Your identity will remain confidential throughout the study.
3. Any data collected from you will be securely stored and only used for research purposes.
4. The findings from this study may be published or presented but will not include any personally identifiable information.
5. If desired, we can provide a summary of the final results upon request.

If you agree to participate in this study, please tick the box below to indicate your consent, followed by your full name and signature. Please do not hesitate to reach out if you have any questions or concerns regarding the study or its procedures. We are more than happy to provide further clarification.

Thank you very much for considering our request, and we greatly appreciate your willingness to contribute to advancing knowledge in this field.

Respectfully,

Mendoza, Gary Isaac A.

Domider, Elic Reuben S.

Corilla, Lord Christian

Sagpang, Ron Derrick O.

Noted by:

RAMCEL PEARL D. PACARAT
Research Teacher

CORITICO, CHERYL JEAN D.
Research Adviser

☐	I accept to become one of the respondents.
☐	I reject becoming one of your respondents because _____.

Name and Signature of the Respondent

Date

APPENDIX C
Questionnaire/s

Elderly AI Integration and Acceptance Questionnaire

Dear Respondent,

This survey is about your thoughts and experiences with **artificial intelligence (AI), a type of technology that can help people by working like human thinking**. The questions will ask about: *(1) how useful you think AI can be, (2) how much you trust and accept AI, (3) your health and daily activities, and (4) your quality of life and feelings*. Your answers will stay private and confidential and will be used only for research. Joining this survey is voluntary, you may withdraw or skip any question if you do not want to answer. Thank you very much for your time.

Instructions

Please read each question carefully and tick (✓) the option that best describes your answer. There are no right or wrong answers. If you are unsure, choose the response that comes closest to your opinion or experience.

Section A: Demographic Profile

1. Age: _____
2. Gender: ☐ Male ☐ Female ☐ Other ☐ Prefer not to say
3. Marital status: ☐ Single ☐ Married ☐ Widowed ☐ Other
4. Living arrangement: ☐ Alone ☐ With family ☐ Assisted living ☐ Other: _____
5. Do you currently use AI-based technology (e.g., smartphone voice assistant, smart home device)? ☐ Yes ☐ No
6. Who mainly provides support in your daily life? ☐ I manage independently ☐ Family ☐ Friends/neighbors ☐ Professional caregiver ☐ Other: _____

Section B: Perceptions of AI Assistance

Yang, H., Lee, J., & Lee, W. (2025). Factors influencing healthcare technology acceptance in older adults through TAM and UTAUT: Meta-Analysis. (Preprint). Journal of Medical Internet Research, 27, e65269. <https://doi.org/10.2196/65269>

Use the scale provided according to your answer. Tick your answer from 1 (Strongly Disagree) to 5 (Strongly Agree).

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1. AI assistants could help me remember medications or appointments.					
2. AI could alert a caregiver or family member if I had a fall or emergency.					
3. Having an AI assistant would help me feel less dependent, while still keeping human support.					
4. AI tools could make it easier for me to stay connected with family and friends.					
5. AI could reduce the stress on both me and my					

caregiver in managing daily routines.					
6. I would feel safer if AI systems monitored only for emergencies and alerted my caregiver or family when needed.					
7. I believe AI tools can improve the overall quality of care for older adults.					
8. I would be comfortable if AI systems kept track of my daily activities (e.g., eating, sleeping, moving) only to share useful information with my doctor for better care.					
9. I believe AI tools that record my daily activities could help doctors and caregivers understand my health needs more accurately.					

Section C: Daily Living Independence

Rathnayake, N., Karunadasa, R., Abeygunasekara, T., De Zoysa, W., Palangasinghe, D., & Lekamwasam, S. (2023). Katz index of activities of daily living in assessing functional status of older people: Reliability and validity of Sinhala version. *Dialogues in Health*, 2, 100134. <https://doi.org/10.1016/j.dialog.2023.100134>

1. Feeding: ☐ Independent (10) ☐ Needs some help (5) ☐ Dependent (0)
2. Bathing: ☐ Independent (5) ☐ Dependent (0)
3. Dressing: ☐ Independent (10) ☐ Needs help (5) ☐ Dependent (0)
4. Toilet use: ☐ Independent (10) ☐ Needs help (5) ☐ Dependent (0)
5. Mobility: ☐ Independent (15) ☐ Uses walking aid/wheelchair (10) ☐ Dependent (0)
6. Stairs: ☐ Independent (10) ☐ Needs help (5) ☐ Unable (0)
7. Grooming: ☐ Independent (5) ☐ Needs help (0)
8. Bladder/Bowel: ☐ Continent (10) ☐ Occasional accidents (5) ☐ Incontinent (0)

Section D: Quality of Life and Health

Gil-Lacruz, M., Cañete-Lairla, M., Navarro, J., Montaña-Espinoza, R., Espinoza-Santander, I., & Osorio-Parraguez, P. (2022). Validation of the WHOQOL-BREF quality of life questionnaire in an urban sample of older adults in a neighbourhood in Zaragoza (Spain). *Healthcare*, 10(11), 2272. <https://doi.org/10.3390/healthcare10112272>

Use the scale provided according to your answer. Tick your answer from 1 (Very Poor) to 5 (Very Good).

	Very Poor (1)	Poor (2)	Fair (3)	Good (4)	Very Good (5)
1. How would you rate your overall quality of life?					
2. How satisfied are you with your health?					
3. Do you have enough energy for everyday life?					

4. How safe do you feel living alone or with limited help?					
5. How satisfied are you with your ability to perform daily activities?					
6. How satisfied are you with your sleep and rest?					
7. How satisfied are you with the support you receive from family or others?					
8. How satisfied are you with your access to healthcare and medical advice?					

APPENDIX D

Validation Sheet/s

VALIDATION SHEET

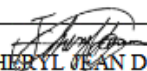
Name of Evaluator: CHERYL JEAN D. CORITICO Degree: BSED-TLE
 Position: HS FACULTY Number of Years in Teaching: 7

To the evaluator: Please check the appropriate box for your rating.

Point Equivalent: 5 – Excellent 3 – Good 1 - Poor
 4 – Very Good 2 – Fair

	5	4	3	2	1
1. CLARITY of DIRECTIONS and ITEMS <i>The vocabulary level, language structure, and concept of the question suit the level of the respondents. The test direction and items are written clearly and understandably.</i>	/				
2. PRESENTATIONS/ORGANIZATION of ITEMS <i>The items are organized logically.</i>		/			
3. SUITABILITY of ITEMS <i>The items appropriately represent the substance of the research. The questions are designed to determine the conditions, knowledge, skills, and attitudes that are supposed to be measured.</i>		/			
4. ADEQUATENESS of ITEMS per CATEGORY <i>The items represent the coverage of the research adequately. The number of questions per category is representative enough of all questions needed for the research.</i>	/				
5. ATTAINMENT of the PURPOSE <i>The instrument as a whole fulfills the objective for which it is constructed.</i>	/				
6. OBJECTIVITY <i>Each item question only one specific answer or measure only one behavior and no aspect of the questionnaire suggests bias on the part of the research.</i>	/				
7. SCALE and EVALUATION in RATING SYSTEM <i>The scale adopted is appropriate for the items.</i>	/				

Remarks:


CHERYL JEAN D. CORITICO
 Signature over Printed Name

VALIDATION SHEET

Name of Evaluator: PACARAT, RAMCEL PEARL D. Degree: BSED ENGLISH
 Position: FACULTY MEMBER Number of Years in Teaching: 2

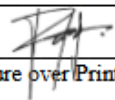
To the evaluator: Please check the appropriate box for your rating.

Point Equivalent: **5** – Excellent **3** – Good **1** – Poor
 4 – Very Good **2** – Fair

	5	4	3	2	1
1. CLARITY of DIRECTIONS and ITEMS <i>The vocabulary level, language structure, and concept of the question suit the level of the respondents. The test direction and items are written clearly and understandably.</i>		✓			
2. PRESENTATIONS/ORGANIZATION of ITEMS <i>The items are organized logically.</i>	✓				
3. SUITABILITY of ITEMS <i>The items appropriately represent the substance of the research. The questions are designed to determine the conditions, knowledge, skills, and attitudes that are supposed to be measured.</i>	✓				
4. ADEQUATENESS of ITEMS per CATEGORY <i>The items represent the coverage of the research adequately. The number of questions per category is representative enough of all questions needed for the research.</i>	✓				
5. ATTAINMENT of the PURPOSE <i>The instrument as a whole fulfills the objective for which it is constructed.</i>		✓			
6. OBJECTIVITY <i>Each item question only one specific answer or measure only one behavior and no aspect of the questionnaire suggests bias on the part of the research.</i>		✓			
7. SCALE and EVALUATION in RATING SYSTEM <i>The scale adopted is appropriate for the items.</i>		✓			

Remarks:

Kindly review some items in considering the sensitivity of the respondents.


 Signature over Printed Name

CURRICULUM VITAE

PERSONAL INFORMATION

Name: Justin Derrick O. Sagpang

Birthday: September 1, 2008

Age: 17

Grade and Section: GRADE 12-KNUTH

Strand: TVL-ICT (Programming)

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EDUCATIONAL BACKGROUND

Senior High School: Mapua Malayan Colleges Mindanao

Junior High School: AMA Computer College

Elementary: University of the Immaculate Conception, Ateneo de Davao University,

Kapitan Tomas Monteverde Sr. Central Elementary School

AWARDS/ACHIEVEMENTS

1st Runner Up, 2025 Robolympics Regional Robolution

September 2025

OTHER SKILLS AND INTEREST

Skill/s: Public Speaking, Problem Solving, Quick Thinking

Talents: Adaptability

Hobbies: Gaming, Singing, Stargazing

PERSONAL INFORMATION

Name: Lord Christian Corilla

Birthday: March 15, 2006

Age: 19

Grade and Section: GRADE 12-KNUTH

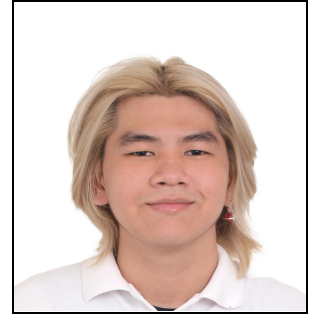
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Email Address: lcCorilla@mcm.edu.ph / lordchristiancorilla@gmail.com /

xtiantiantian1@gmail.com

**EDUCATIONAL BACKGROUND**

Senior High School: Mapua Malayan Colleges Mindanao

Junior High School: Calasanz De Davao Academy

Elementary: Calasanz De Davao Academy, Saint Peters College

AWARDS/ACHIEVEMENTS

1st Runner Up, 2025 Robolympics Regional Robolution

September 2025

OTHER SKILLS AND INTEREST

Skill/s: Problem Solving, Hard Working

Talents: Adaptability

Hobbies: Gaming, Dancing, Exercising

PERSONAL INFORMATION

Name: Ellie Reuben S. Domider

Birthday: August 23, 2007

Age: 18

Grade and Section: GRADE 12-KNUTH

Strand: TVL-ICT (Programming)

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**EDUCATIONAL BACKGROUND**

Senior High School: Mapua Malayan Colleges Mindanao

Junior High School: Notre Dame Of Tacurong Collage

Elementary: Tacurong Pilot Elementary School

AWARDS/ACHIEVEMENTS

1st Runner Up, 2025 Robolympics Regional Robolution

September 2025

OTHER SKILLS AND INTEREST

Skill/s: Programming, Wiring, Coding

Talents: Adapting/Adjusting

Hobbies: Games

PERSONAL INFORMATION

Name: Gary Isaac A. Mendoza

Birthday: October 1, 2007

Age: 18

Grade and Section: GRADE 12-KNUTH

Strand: TVL-ICT (Programming)

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**EDUCATIONAL BACKGROUND**

Senior High School: Mapua Malayan Colleges Mindanao

Junior High School: Colegio de San Ignacio

Elementary: Colegio de San Ignacio

AWARDS/ACHIEVEMENTS

1st Runner Up, 2025 Robolympics Regional Robolution September 2025

Divisional Schools Press Conference (Radio Broadcasting) (Best Anchor)

(3rd Place Best in Infomercial) October-November 2019

3rd Runner Up, DAPRISA 2023 Table Tennis 2023

OTHER SKILLS AND INTEREST

Skill/s: Programming

Talents: Adaptability

Hobbies: Playing Guitar, Ware Tinkering, Drawing